

WHAT IS CLAIMED IS:

1. An image communication system in which an image server and a client computer having a display device are capable of communicating with each other, said image server storing

5 image data representing an image,

said client computer comprising:

17 a first transmission device transmitting to said image server a command to transmit the image data stored in said image server; and

10 a second transmission device transmitting to said image server display information relating to said display device, and

said image server comprising

15 a data quantity reduction device reducing the data quantity of image data, to be transmitted in response to the image transmission command transmitted from said first transmission device, on the basis of the display information transmitted from said second transmission device, and

20 an image data transmission device transmitting to said client computer the image data whose data quantity is reduced by said data quantity reduction device.

2. The image communication system according to claim 1, wherein

the display information is information relating to the  
25 maximum number of colors which can be displayed on said

display device, and

said data quantity reduction device includes color reduction means for reducing a number of colors of an image represented by the image data to be transmitted in response to the image transmission command on the basis of the information relating to the maximum number of colors.

3. The image communication system according to claim 1, wherein

the display information is information relating to the resolution of said display device, and

said data quantity reduction device includes thinning means for thinning out the image data on the basis of the information relating to the resolution, to be transmitted in response to the image transmission command, to reduce the data quantity of the image data.

4. The image communication system according to claim 1, said image server further comprising:

a printer for printing an image, and

color conversion processing means for performing color conversion processing of the image data whose data quantity is reduced by said data quantity reduction device on the basis of data representing characteristics of said display device.

5. An image server used in an image communication system in which the image server and a client computer having a

display device are capable of communicating with each other, wherein said image server stores image data representing an image, comprising:

5 a receiving device receiving a command to transmit the image data stored in said image server and display information relating to said display device which are transmitted from said client computer;

10 a data quantity reduction device reducing the data quantity of image data to be transmitted in response to the image data transmission command on the basis of the display information received by said receiving device ; and

an image data transmission device transmitting to said client computer the image data whose data quantity is reduced by said data quantity reduction means.

15 6. The image server according to claim 5, wherein

the display information is information relating to the maximum number of colors which can be displayed on said display device, and

20 said data quantity reduction device includes color reduction means for reducing a number of colors of an image represented by the image data to be transmitted in response to the image transmission command on the basis of the information relating to the maximum number of colors.

7. The image server according to claim 5, wherein

25 the display information is information relating to the

resolution of said display device, and

said data quantity reduction device includes thinning means for thinning out the image data to be transmitted in response to the image transmission command on the basis of  
5 the information relating to the resolution.

8. The image server according to claim 5, further comprising:

a printer for printing an image, and

color conversion processing means for performing color  
10 conversion processing of the image data whose data quantity is reduced by said data quantity reduction device on the basis of data representing characteristics of said display device.

9. A client computer having a display device used in an  
15 image communication system in which an image server storing image data representing an image and the client computer are capable of communicating with each other, comprising:

a transmission device transmitting to said image server  
a command to transmit the image data stored in said image  
20 server and display information relating to said display device; and

a receiving device receiving the image data, whose data quantity is reduced on the basis of the display information in said image server, to be transmitted in response to said  
25 image transmission command.

10. An image server used in an image communication system in which the image server and a client computer having a display device are capable of communicating with each other, comprising:

5 an image data reading device reading image data representing an image;

an input device inputting display direction data indicating whether a normal direction of display of the image represented by the image data read by said image data reading device is a longitudinal direction or a transverse direction;

10 a display direction conversion processing device performing display direction conversion processing of the image data read by said image data reading device on the basis of the display direction data inputted from said input device such that the direction of display of the image represented by the image data is a normal direction;

15 an image data storage device storing the image data which has been subjected to the conversion processing by said display direction conversion processing device; and

20 an image data transmission device reading out from said image storage device image data representing an image corresponding to an image transmission command transmitted from said client computer, and transmitting the image data

25 to said client computer.

11. In an image communication system in which an image server and a client computer having a display device are capable of communicating with each other, said image server storing image data representing an image, an image  
5 communication method comprising the steps of:

transmitting a command to transmit the image data stored in said image server and display information relating to said display device from said client computer to said image server;

10 reducing, in said image server, the data quantity of the image data to be transmitted in response to the image transmission command on the basis of the display information transmitted from said client computer; and

transmitting the image data whose data quantity is  
15 reduced from said image server to said client computer.

12. A method of transmitting image data in an image server used in an image communication system in which the image server and a client computer having a display device are capable of communicating with each other, comprising the  
20 steps of:

reading image data representing an image;

accepting input of display direction data indicating whether a normal direction of display of the image represented by the read image data is a longitudinal  
25 direction or a transverse direction;

performing display direction conversion processing of  
the read image data read on the basis of the display  
direction data which has been accepted such that the  
direction of display of the image represented by the read  
5 image data is a normal direction;

storing the image data which has been subjected to the  
display direction conversion processing; and

transmitting, in response to an image transmission  
command transmitted from the client computer, to said client  
10 computer image data representing an image specified by the  
image transmission command out of the stored image data.

13. An image communication system in which an image server  
and an image data receiver having a display device are  
capable of communicating with each other,

15 said image server comprising:

an image display data transmission device transmitting  
image display data for displaying a plurality of sample  
images having different characteristics to said image data  
receiver, and

20 said image data receiver comprising:

an image characteristics setting device receiving the  
image display data transmitted from said image display data  
transmission device, displaying the plurality of sample  
images on said display device on the basis of the received  
25 image display data, and determining characteristics relating

to the image selected from the displayed sample images; and

an image characteristics data transmission device  
transmitting data representing the image characteristics  
determined by said image characteristics setting device to  
5 said image server.

14. The image communication system according to claim 13,  
wherein

10 said image display data transmission device transmits  
to said image data receiver the image display data  
representing the plurality of images having different  
tonalities.

15. The image communication system according to claim 13,

15 said image server comprising an image data transmission  
device transmitting to said image data receiver image data  
whose characteristics has not been adjusted if said image  
data receiver can change the characteristics of the image  
displayed on said display device, while transmitting to said  
image data receiver image data whose characteristics has  
been adjusted in accordance with the image characteristics  
20 data transmitted from said image characteristics data  
transmission device if said image data receiver cannot  
change the characteristics of the image displayed on said  
display device.

16. The image communication system according to claim 13,  
25 wherein



at least one of said image server and said image data receiver is provided with a storage device storing said image characteristic data.

17. An image data receiver having a display device used in  
5 an image communication system in which an image server and the image data receiver are capable of communicating with each other, comprising:

an image characteristics setting device receiving the image display data for displaying a plurality of sample  
10 images having different characteristics transmitted from said image server, displaying the plurality of sample images on said display device on the basis of the received image display data, and determining characteristics relating to the image selected from the displayed sample images; and

15 an image characteristics data transmission device transmitting data representing the image characteristics determined by said image characteristics setting device to said image server.

18. In an image communication system in which an image  
20 server and an image data receiver having a display device are capable of communicating with each other, an image communication method comprising the steps of:

transmitting image display data for displaying a plurality of sample images having different characteristics  
25 from said image server to said image data receiver;

receiving, in said image data receiver, the image display data transmitted from said image server;

displaying the plurality of sample images on said display device on the basis of the received image display data;

determining characteristics relating to the image selected from the displayed sample images; and

transmitting data representing the determined image characteristics from said image data receiver to said image server.

19. A client computer used in an image communication system in which an image server having an image output device for outputting an image and the client computer are capable of communicating with each other, comprising:

an image data quantity reduction device for reducing, the data quantity of image data to be transmitted to said image server such that the data quantity of the image data to be transmitted is equal to or less than the data quantity of the image data representing the image to be outputted from said image output device; and

an image data transmission device for transmitting to said image server the image data whose data quantity is reduced by said image data quantity reduction device.

20. The client computer according to claim 19, wherein

said image data quantity reduction device includes at

least one of resolution conversion means for converting the image data to be transmitted into image data having a resolution which is not more than the resolution of the image which can be outputted from said output device, to reduce the quantity of the image data, and thinning means for thinning the image data such that the size thereof is equal to the size of the output image outputted from said output device.

21. The client computer according to claim 19, wherein said image data quantity reduction device comprises print image area designation means for designating an image area to be printed of an image represented by image data of one frame, and partial image data extraction means for extracting from said image data of one frame partial image area data representing the image area designated by said print image area designation means.

22. The client computer according to claim 19, wherein said image data quantity reduction device comprises compression rate determination means for determining the compression rate of the image data to be transmitted to said image server on the basis of the speed of transmission of the image data between the image server and said client computer, and

image data compression means for compressing the image

data at the compression rate determined by said compression rate determination means.

23. A client computer used in an image communication system in which an image server and the client computer are capable of communicating with each other, comprising:

a compression rate setting device for setting the compression rate of image data;

a calculation device for calculating information relating to time required for transmission in a case where the image data compressed at the compression rate set by said compression rate setting device is transmitted to said image server; and

a display device for displaying the information relating to the time required for transmission calculated by said calculation device.

24. The client computer according to claim 23, further comprising

a display control device for carrying out such control that an image represented by the image data compressed at the compression rate set by said compression rate setting device is displayed on said display device.

25. An image communication system in which an image server and a client computer are capable of communicating with each other, wherein image data and information relating to the image data are transmitted from said client computer to said

image server,

said image server comprising:

an image output device for outputting an image represented by the image data transmitted from said client  
5 computer on the basis of the information relating to the image data transmitted from said client computer; and

an image information transmission device for transmitting to said client computer the information relating to the image data transmitted from said client  
10 computer, and

said client computer comprising:

retrieval means for retrieving image data specified by the information relating to the image data transmitted from said image server.

26. A client computer used in an image communication system in which an image server having a printer and the client computer are capable of communicating with each other, comprising:

a receiving device for receiving a part of printing template image data, which is transmitted from said image server, used for printing processing in said printer; and

a synthesis device for synthesizing the part of the printing template image data received by said receiving device and a part of user image data stored in the client  
25 computer.

27. A method of transmitting image data from a client computer to an image server, said client computer and said image server being used in an image communication system in which said image server having an image output device for outputting an image and said client computer are capable of communicating with each other, comprising the steps of:

reducing the data quantity of image data to be transmitted to said image server such that the data quantity of the image data to be transmitted is equal to or less than the data quantity of the image data representing the image to be outputted from said image output device; and

transmitting to said image server the image data whose data quantity is reduced.

28. A method of displaying information in a client computer which is used in an image communication system in which an image server and the client computer are capable of communicating with each other, comprising the steps of:

setting the compression rate of image data;

calculating information relating to time required for transmission in a case where the image data compressed at the compression rate is transmitted to said image server; and

displaying the calculated information relating to the time required for transmission.

29. In an image communication system in which an image

server and a client computer are capable of communicating with each other, an image communication method comprising the steps of:

transmitting image data and information relating to the  
5 image data from said client computer to said image server;

outputting, in said image server, an image represented by the image data transmitted from said client computer on the basis of the information relating to the image data transmitted from said client computer;

10 transmitting the information relating to the image data transmitted from said client computer, from said image server to said client computer; and

retrieving, in said client computer, image data specified by the information relating to the image data  
15 transmitted from said image server.

30. A method of synthesizing images in a client computer which is used in an image communication system in which an image server having a printer and the client computer are capable of communicating with each other, comprising the  
20 steps of:

receiving a part of printing template image data, which is transmitted from said image server, used for printing processing in said printer; and

synthesizing the received part of the printing template  
25 image data and a part of user image data stored in the

client computer.

31. A computer-readable recording medium storing a program for transmitting image data from a client computer which is used in an image communication system in which an image

5 server having an image output device for outputting an image and the client computer are capable of communicating with each other, said program controlling the computer so as to:

reduce, the data quantity of image to be transmitted to said image server such that the data quantity of the image data to be transmitted is equal to or less than the data quantity of the image data representing the image to be outputted from said image output device; and

transmit the image data whose data quantity is reduced to said image server.

10  
32. A computer-readable recording medium storing a program for displaying information in a client computer which is used in an image communication system in which an image server and the client computer are capable of communicating with each other, said program controlling the computer so as to:

20 set the compression rate of image data;

calculate information relating to time required for transmission in a case where the image data compressed at the set compression rate is transmitted to said image

25 server; and



display the calculated information relating to the time required for transmission.

33. A computer-readable recording medium storing a program used in an image communication system in which an image  
5 server and a client computer are capable of communicating with each other, said program controlling the computer so as to:

transmit image data and information relating to the image data from said client computer to said image server;

10 output, in said image server, an image represented by the image data transmitted from said client computer on the basis of the information relating to the image data transmitted from said client computer;

transmit the information relating to the image data  
15 transmitted from said client computer, from said image server to said client computer; and

retrieve, in said client computer, image data specified by the information relating to the image data transmitted from said image server.

20 34. A computer-readable recording medium storing a program for synthesizing images in a client computer which is used in an image communication system in which an image server having a printer and the client computer are capable of communicating with each other, said program controlling the  
25 computer so as to:

receive a part of printing template image data, which is transmitted from said image server, used in printing processing in said printer; and

5 synthesize the received part of the printing template image data and a part of user image data stored in the client computer.

35. An image editing system in which an image server and a plurality of client computers are capable of communicating with one another, an image represented by image data is  
10 edited in one of said client computers, and editing information relating to the edited image is transmitted from said one client computer to said image server, wherein

said image server comprises

an editing information transmission device for  
15 transmitting the editing information relating to the edited image which has been transmitted from said one client computer to said one client computer or other client computer, and

said one or other client computer comprises

20 an image reediting device for reediting the edited image generated in said one client computer on the basis of the editing information relating to the edited image which has been transmitted from said image server, and

a reediting information transmission device for  
25 transmitting to said image server reediting information

relating to the reedited image generated in said image reediting device.

36. The image editing system according to claim 35, wherein said reediting information transmission device  
5 transmits information relating to a portion reedited by said image reediting device.

37. The image editing system according to claim 35, wherein execution data indicating that an image is edited or reedited is transmitted from said one or other client  
10 computer to said image server prior to editing or reediting the image,

said image server further comprises  
a judgment device for judging whether or not the editing or reediting of the image is allowed on the basis of  
15 said execution data transmitted from said one or other client computer, and

an allowance data transmission device for transmitting, when said judgment device judges that the editing or reediting of the image is allowed, data representing  
20 allowance to said one or other client computer which has been allowed to edit or reedit the image, and

said one or other client computer further comprises  
a control device for performing the editing or reediting the image in response to the receiving of the data  
25 representing allowance which has been transmitted from said

allowance data transmission device.

38. The image editing system according to claim 37, wherein  
said plurality of client computers are classified into  
a plurality of groups each comprising one or two or more of  
5 said client computers,

hub  
day  
said image server further comprises transmission device  
for transmitting said reediting information transmitted from  
said reediting information transmission device to said  
client computer in the group to which the one or other  
10 client computer which has transmitted the reediting  
information belongs.

39. The image editing system according to claim 38, wherein  
said one or other client computer further comprises  
a comment entry device for entering a comment  
15 concerning said editing information or said reediting  
information which has been transmitted from said image  
server, and

a comment transmission device for transmitting to said  
image server the comment entered from said comment entry  
20 device.

40. The image editing system according to claim 35, wherein  
said edited image is constituted by a plurality of  
object images, object image editing request data indicating  
that said object images are subjected to object image  
25 editing which is at least one of addition, alteration, and

deletion being transmitted from the one or other client computer to said image server,

said image server further comprises

an object image editing judgment device for judging  
5 whether or not said object image editing is allowed on the basis of said object image editing request data transmitted from said one or other client computer, and

an object image editing allowance data transmission device for transmitting, when said object image editing judgment device judges that said object image editing is  
10 allowed, object image editing allowance data for allowing said object image editing to the one or other client computer which has been allowed to edit the object image, and

15 said one or other client computer further comprises

an object image editing device for performing said object image editing in response to the receiving of said object image editing allowance data transmitted from said image server.

20 41. A client computer constituting a system in which an image server and a plurality of client computers are capable of communicating with one another, comprising:

an image editing device for editing an image using an image represented by image data;

25 an editing information transmission device for

transmitting to said image server editing information relating to the edited image generated in said image editing device;

an editing information receiving device for receiving  
5 the editing information transmitted from said image server;

an image reediting device for reediting the edited image on the basis of the editing information received by said editing information receiving device; and

10 a reediting information transmission device for transmitting to said image server reediting information relating to the reedited image generated in said image reediting device.

42. An image editing method, wherein an image server and a plurality of client computers are capable of communicating  
15 with one another, comprising the steps of:

editing an image using an image represented by image data in one of said client computers;

transmitting editing information relating to the edited image from said one client computer to said image server,

20 receiving the editing information transmitted from said one client computer in said image server;

transmitting the received editing information from said image server to said one client computer or other client computer;

25 reediting the edited image generated on the basis of

the editing information transmitted from said image server  
in said one or other client computer; and

transmitting reediting information relating to the  
reedited image from said one or other client computer to  
said image server.

43. The image editing method according to claim 42, further  
comprising

transmitting information relating to a reedited portion  
from said one or other client computer to said image server.

44. The image editing method according to claim 42, wherein  
execution data indicating that an image is edited or  
reedited is transmitted from said one or other client  
computer to said image server prior to editing or reediting  
the image, comprising

the following steps in said image server:

judging whether or not the editing or reediting of the  
image is allowed on the basis of said execution data  
transmitted from said one or other client computer, and

transmitting, when it is judged that the editing or  
reediting of the image is allowed, data representing  
allowance from said image server to the one or other client  
computer which has been allowed to edit or reedit the image,  
and

the following step in said one or other client  
computer:

editing or reediting the image in response to the receiving of the allowance data transmitted from said image server.

45. The image editing method according to claim 44,  
5 comprising the following step in said image server:

said plurality of client computers are classified into a plurality of groups each comprising one or two or more of said client computers,

transmitting said reediting information to said client  
10 computer in the group to which said one or other client computer which has transmitted said reediting information belongs.

46. The image editing method according to claim 45,  
comprising the following steps in said one or other client  
15 computer:

entering a comment concerning said editing information or said reediting information which has been transmitted from said image server, and

transmitting the entered comment to said image server.

20 47. The image editing method according to claim 42, wherein said edited image is constituted by a plurality of object images, object image editing request data indicating that said object images are subjected to object image editing which is at least one of addition, alteration and  
25 deletion being transmitted from said one or other client



computer to said image server, comprising

the following steps in said image server:

judging whether or not said object image editing is  
allowed on the basis of said object image editing request  
5 data transmitted from said one or other client computer, and

transmitting, when it is judged that said object image  
editing is allowed, object image editing allowance data for  
allowing said object image editing to said one or other  
client computer which has been allowed to edit the object  
10 image, and

the following step in said one or other client  
computer:

performing said object image editing in response to the  
receiving of said object image editing allowance data  
15 transmitted from said image server.

48. A computer-readable recording medium storing a program  
for causing a client computer constituting a system in which  
an image server and a plurality of client computers are  
capable of communicating with one another to edit an image,  
20 and controlling said client computer so as to:

edit an image using an image represented by image data  
in said client computer;

transmit editing information relating to the edited  
image from said client computer to said image server;

25 receive the editing information transmitted from said

image server;

reedit the edited image generated on the basis of the  
received editing information; and

transmit to said image server reediting information  
5 relating to the reedited image.